

Claims

- [c1] An interconnecting device which interconnects a plurality of ISPs and user terminals comprising:
- a receiving unit which receives packets from the user terminals,
 - a destination information acquisition unit connecting to said receiving unit, which acquires a destination IP address from the packets received by said receiving unit,
 - a domain name acquisition unit which acquires a domain name, corresponding to the destination IP address acquired by said destination information acquisition unit,
 - a destination information storing unit which stores the domain name and ISP identification information of the ISP in association with the domain name; and
 - a transmitting unit connecting to said domain name acquisition unit and said destination information storing unit, said transmitting unit transmitting the packets to the ISP, ISP identification information of which is stored in said destination information storing unit in association with the domain name acquired by said domain name acquisition unit.
- [c2] An interconnecting device which interconnects a plurality of ISPs and user terminals comprising:
- a routing information acquisition unit which acquires routing information between a communication terminal which the user terminal accesses through either of the plurality of ISPs, and each of the plurality of ISPs,
 - a destination information storing unit which stores terminal identification information of a communication terminal and ISP identification information of either of the plurality of ISPs in association with the terminal identification information, based on the routing information acquired by said routing information acquisition unit,
 - a receiving unit which receives packets from the user terminal,
 - a terminal identification information acquisition unit which acquires terminal identification information of a destination communication terminal from the packet received by said receiving unit; and
 - a transmitting unit which transmits the packets to the ISP, ISP identification

[c4] The interconnecting device as claimed in claim 3, wherein said routing information acquisition unit acquires hop counts, as the routing information, at the time of transmitting packets to a communication terminal identified by the domain name through each of the plurality of ISPs, and said destination information storing unit stores the domain name and the ISP identification information in association with the domain name, when the hop count via the ISP, acquired by said routing information acquisition unit, is fewer than the hop count via the other ISPs.

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is shorter than the response time via the other ISPs.

- [c6] The interconnecting device as claimed in claim 3, wherein said transmitting unit continues, until predetermined period passes, to transmit packets received by said receiving unit from the user terminal to the same ISP, after said transmitting unit begins to transmit the packets to the ISP, ISP identification information of which is stored in said destination information storing unit in association with the domain name acquired by said terminal information acquisition unit.
- [c7] The interconnecting device as claimed in claim 3, further comprising a historical information storing unit which stores the routing information acquired by said routing information acquisition unit in association with a time, wherein said destination information storing unit stores the domain name and ISP identification information of either of the plurality of ISPs in association with the domain name and each time zone, based on the routing information stored in said historical information storing unit.
- [c8] The interconnecting device as claimed in claim 3, further comprising an access count storing unit which stores an access count to the communication terminal identified by the domain name in association with the domain name, wherein said routing information acquisition unit acquires routing information between the communication terminal identified by a domain name, and each of the plurality of ISPs, in the case where the access count stored in said access count storing unit is more than a predetermined count.
- [c9] An interconnecting method of an interconnecting device which interconnects a plurality of ISPs and user terminals, comprising:
a receiving step which receives packets from the user terminals,
a destination information acquisition step which acquires a destination IP address from the packet received in said receiving step,
a domain name acquisition step which acquires a domain name corresponding to the destination IP address acquired in said destination information acquisition step from a DNS server; and
a transmitting step which transmits the packets to the ISP, ISP identification

information of which is stored in said destination information storing unit in association with the domain name acquired in said domain name acquisition step.

[c10] An interconnecting method of an interconnecting device which interconnects a plurality of ISPs and user terminals, comprising:

- a routing information acquisition step which acquires routing information between a communication terminal which the user terminal accesses through either of the plurality of ISPs, and each of the plurality of ISPs,
- a destination information storing step which stores terminal identification information of a communication terminal and ISP identification information of either of the plurality of ISPs in association with the terminal identification information to said destination information storing unit, based on the routing information acquired in said routing information acquisition step,
- a receiving step which receives packets from the user terminal,
- a terminal identification information acquisition step which acquires terminal identification information of a destination communication terminal from the packet received in said receiving step; and
- a transmitting unit which transmits packets to the ISP, ISP identification information of which is stored in said destination information storing unit in association with the terminal identification information acquired in said terminal identification information acquisition step.

[c11] A computer readable medium storing thereon a program for an interconnecting device which interconnects a plurality of ISPs and user terminals, operating the interconnecting device by:

- a receiving means which receives packets from the user terminals,
- a destination information acquisition means which acquires a destination IP address from the packet received by said receiving means,
- a domain name acquisition means which acquires a domain name corresponding to the destination IP address acquired by said destination information acquisition means from a DNS server,
- a destination information storing means which stores the domain name and the ISP in association with the domain name; and

a transmitting means which transmits the packets to the ISP, ISP identification information of which is stored in said destination information storing unit in association with the domain name acquired by said domain name acquisition means.

[c12] A computer readable medium storing thereon a program for an interconnecting device which interconnects a plurality of ISPs and user terminals, operating the interconnecting device by:

a routing information acquisition means which acquires routing information between a communication terminal which the user terminal accesses through either of the plurality of ISPs, and each of the plurality of ISPs,

a destination information storing means which stores terminal identification information of a communication terminal and ISP identification information of either of the plurality of ISPs in association with the terminal identification information, based on the routing information acquired by said routing information acquisition means,

a receiving means which receives packets from the user terminal,

a terminal identification information acquisition means which acquires terminal identification information of a destination communication terminal from the packet received by said receiving means; and

a transmitting means which transmits the packets to the ISP, ISP identification information of which is stored in said destination information storing unit in association with the terminal identification information acquired by said terminal identification information acquisition means.

[c13] A communication system comprising an interconnecting device which interconnects user terminals and the Internet, and a plurality of ISPs which authenticate the interconnecting device and permit connection with the Internet, the interconnecting device comprising:

a receiving unit which receives packets from the user terminals.

a destination information acquisition unit which acquires a destination IP address from the packets received by said receiving unit,

a domain name acquisition unit which acquires a domain name, corresponding to the IP address acquired by said destination information acquisition unit, from

a DNS server,
 a destination information storing unit which stores the domain name and the
 in association with the domain name,
 a transmitting unit which transmits the packets to the ISP, ISP identification
 information of which is stored in said destination information storing unit in
 association with the domain name acquired by said domain name acquisition
 unit.

[c14] A communication system comprising an interconnecting device which
 interconnects user terminals and the Internet, and a plurality of ISPs which
 authenticate the interconnecting device and permit connection with the Internet,
 the interconnecting device comprising:
 a routing information acquisition unit which acquires routing information
 between a communication terminal which the user terminal accesses through
 either of the plurality of ISPs, and each of the plurality of ISPs,
 a destination information storing unit which stores terminal identification
 information of a communication terminal and ISP identification information of
 either of the plurality of ISPs in association with the terminal identification
 information, based on the routing information acquired by said routing
 information acquisition unit,
 a receiving unit which receives packets from the user terminal,
 a terminal identification information acquisition unit which acquires terminal
 identification information of a destination communication terminal from the
 packet received by said receiving unit; and
 a transmitting unit which transmits the packets to the ISP, ISP identification
 information of which is stored in said destination information storing unit in
 association with the terminal identification information acquired by said
 terminal identification information acquisition unit.